

EXHIBIT A

“Compounds of Silicon” as available at

<http://www.webelements.com/webelements/compounds/text/Si/N4Si3-12033895.html>

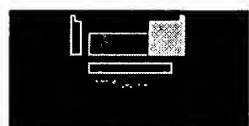
For Serial No.: 09/981,402
Applicant(s): SATOH, Yoshihiro

Chemistry: WebElements Periodic Table: Professional Edition: Silicon: compound data [silicon (IV) nitride]

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Silicium
silicium
Silicium
silicio
Silício
silicio
Kisel



Online discussions

Silicon

14
Si
28.0855(3)

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Compounds of silicon:

silicon (IV) nitride

- **Formula as commonly written:** Si_3N_4
- **Hill system formula:** N_4Si_3
- **CAS registry number:** [12033-89-5]
- **Formula weight:** 140.283
- **Class:** nitride

Synonyms

- silicon (IV) nitride
- silicon nitride
- trisilicon tetranitride

Physical properties

- **Colour:** grey
- **Appearance:** crystalline solid
- **Melting point:** 1900°C
- **Boiling point:**
- **Density:** 3200 kg m⁻³

Element analysis and oxidation numbers

For each compound, and where possible, a formal oxidation number for each element is given, but the usefulness of this number is limited, especially so for *p*-block elements in particular. Based upon that oxidation number, an electronic configuration is also given but note that for more exotic compounds you should view this as a guide only.

Thermodynamic
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Element	%	Formal oxidation state	Formal electronic configuration
N	39.94	-3	[He].2s ² .2p ⁶
Si	60.06	4	[Ne]

Cl

Br

Ic

H

O

Si

S

Te

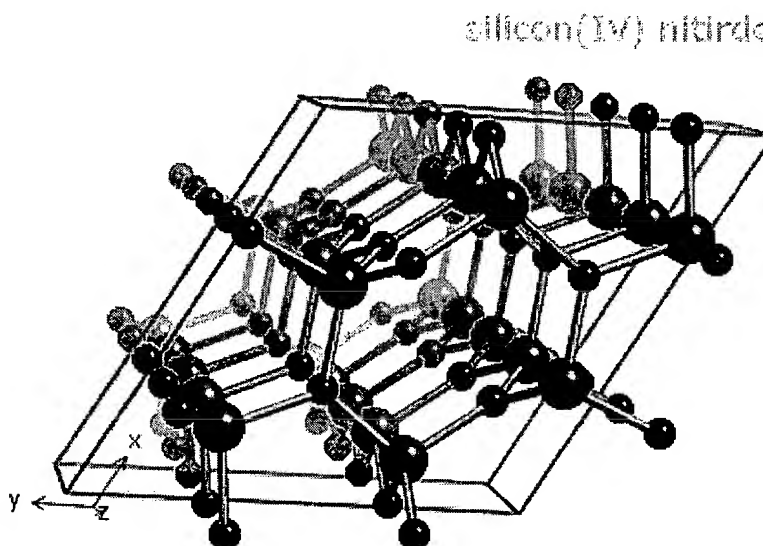
Ni

Synthesis

Not available

Solid state structure

- **Geometry of silicon:** 4 coordinate: tetrahedral
- **Prototypical structure:**

**Isotope pattern**

What follows is the calculated isotope pattern for the Si₃N₄ unit with the most intense ion set to 100%.

Formula: Si₃N₄

mass	%
140	100.0
141	16.7
142	11.1
143	1.2
144	0.4
145	0.0
146	0.0

Suppliers

Coming soon....


References

The data on these compounds pages are assembled and adapted from the primary literature and several other sources including the following.

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